

Claims

- [c1] An apparatus for detecting the flow of powder coating particles, said apparatus comprising:
- a. a reservoir for said powder coating particles;
 - b. at least one powder spray gun;
 - c. a transportation line for said powder coating particles extending from said reservoir to said at least one powder spray gun, a portion of said transportation line having an interior face comprising a material which becomes electrically charged by friction with said powder coating particles;
 - d. a pump for said powder coating particles located along said transportation line;
 - e. a unit for measuring electrical signals; and
 - f. a signal carrying line interconnecting said unit and said portion of said transportation line which is electrically charged by friction, wherein said portion of said transportation line is located inside said pump.
- [c2] The device of claim 1 wherein said gun is a corona gun.
- [c3] The device of claim 2 wherein said unit comprises both a unit for measuring electrical signals and a unit for displaying said electrical signals to the user.

[c4] In an apparatus for electrostatic powder coating having a reservoir holding powder coating particles, at least one powder spray gun, a transportation line for said powder coating particles extending from said reservoir to said at least one powder spray gun wherein a portion of said transportation line has an interior face comprising a material that becomes electrically charged by friction with said powder coating particles, a pump for said powder coating particles located along said transportation line, and a unit for sensing electrical signals, a method for detecting the flow of powder coating particles, comprising the steps of:

- a. pumping powder coating particles from said reservoir through a transportation line to said at least one powder spray gun by means of said pump;
- b. locating within said pump said portion of said transportation line which has an interior face comprising a material that becomes electrically charged by friction with said powder coating particles;
- c. generating a triboelectric charge in said pump by causing powder coating particles flowing through said pump to contact said interior face; and
- d. utilizing said unit for sensing electrical signals to sense the triboelectric charge generated in said pump.

[c5] The method of claim 4 further comprising the step of displaying said electrical signals to the user.